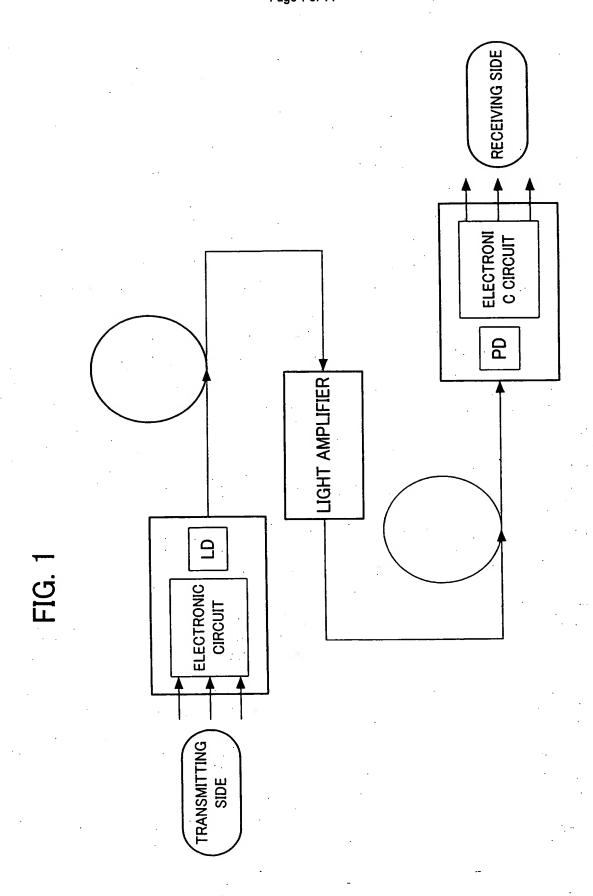
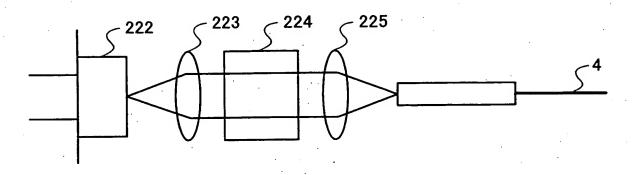
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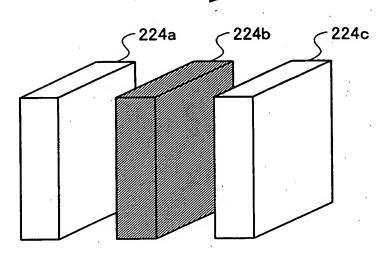
FIG. 2



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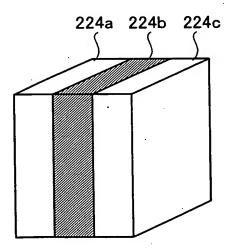
FIG. 3A

## FORWARD DIRECTION



MAGNETIC FIELD APPLICATION DIRECTION

FIG. 3B



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FIG. 4

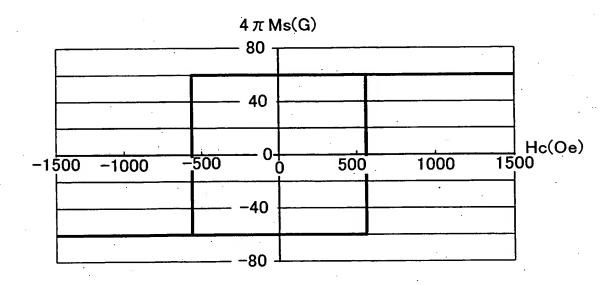
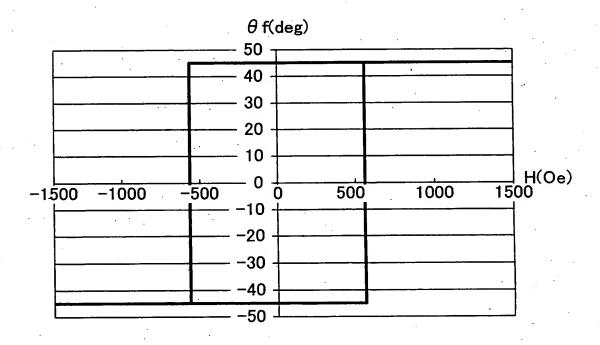
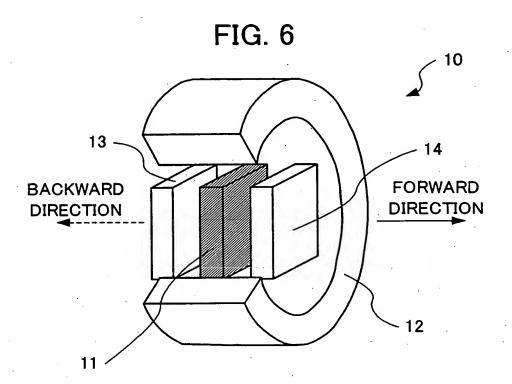


FIG. 5



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FIG. 7A

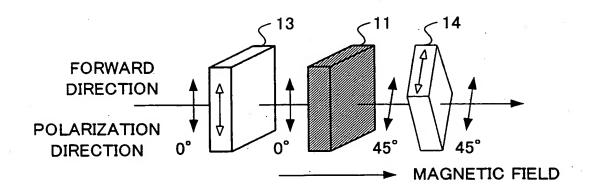
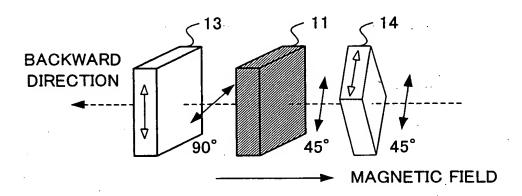
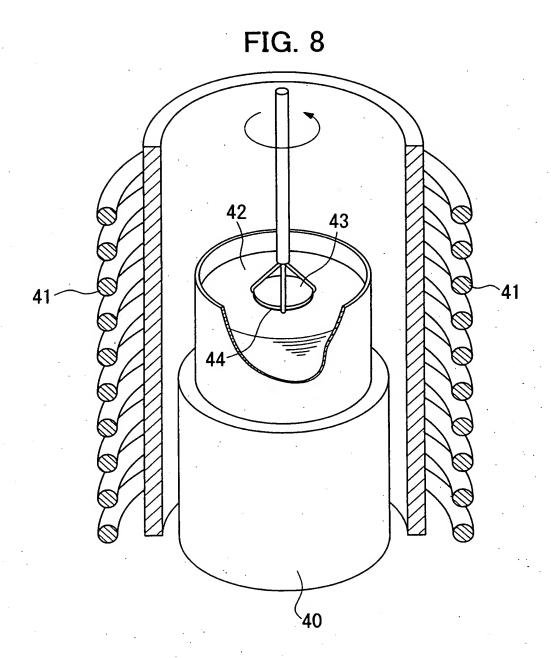


FIG. 7B



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| SAMPLE   | CHEMICAL COMPOSITION                          | ROTARY  | TEMPERA-<br>TURE<br>PROPERTY | WAVE-<br>LENGTH<br>PROPERTY | INSERTION<br>LOSS                      | ≥        | REMARKS                             |
|----------|---|---------|------------------------------|-----------------------------|--|----------|-------------------------------------|
|          |   | (mo/ _) | 5) ;                         | (%)                         | (Ab)                                   | IYPE     |                                     |
|          |   |         | 3                            | / nm/                       |  |          |                                     |
| <b>,</b> | Bi. Gd. Th. Vh. Fe. Ga. O.                    | 008     | 10.8                         | 6.8                         | 700                                    | HARD     | HARD   PRESENT INVENTION            |
| -        | 51.0 d d 0.4 i 51.2 i 50.4 i 54.0 d d 1.0 512 | 966     | 0.078                        | 0.061                       | 0.07                                   | MAGNETIC |                                     |
| ۰ ، د    | Bi Th V Fe. Ga. O.                            | 050     | 11.8                         | 6.8                         | 0.19                                   | HARD     | COMPARATIVE<br>EXAMPI E (CONTAINING |
| 7        | D1.2   D1.4   0.4   03.8 CC   1.2   1.2       | 990     | 0.085                        | 0.061                       | 0.12                                   | MAGNETIC | NO Gd)                              |
| c        |   | 050     | 13.9                         | 8.3                         | 600                                    | HARD     | COMPARATIVE EXAMPLE (CONTAINING     |
| ?        | D11244121 D0.61 93.9441,1012                  | 900     | 0.100                        | 0.075                       | 0.02                                   | MAGNETIC | NO Tb)                              |
|          |   | 650     | 10.4                         | 6.8                         | 200                                    | HARD     | COMPARATIVE<br>EXAMPI E (CONTAINING |
| t        | 0.7 dd1.1 1 D1.21 04.2 dd0.8 0 12             | 000     | 0.075                        | 0.061                       | 0.07                                   | MAGNETIC | NO Yb)                              |
| u        | Bi GA Ee Ga Al O                              | UUB     | 11.8                         | 8.2                         | 200                                    | HARD     | JAPANESE PATENT                     |
| ဂ        | 011.2 du1.81 64.0 da0.5 01.5 012              | 900     | 0.085                        | 0.074                       | 0.07                                   | MAGNETIC |                                     |
| ä        | Bi Ei. Fe. Ga. Al. O                          | טטא     | 13.9                         | 8.3                         | 700                                    | HARD     | HARD I AID-OPEN No 9-               |
| 9        | 01.0Ld2.01 04.0 dd0.5\0.05 \0.12              | 8       | 0.100                        | 0.075                       | 6.0                                    | MAGNETIC | 185027,                             |
| ,        | Bi Th Fe Ga Al. O.                            | 1050    | 10.0                         | 6.7                         | 0.11                                   | HARD     | HARD I AID-OPEN No 9-               |
| •        | U1.37 1 U1.63 44.0 44.0 44.0 15 12            | 1000    | 0.072                        | 0.060                       | -                                      | MAGNETIC | 328398.                             |
| ٥        | Bi Th Ho. Fe. Ga Al. O.                       | 1100    | 15.3                         | 6.9                         | 60 0                                   | HARD     | JAPANESE PATENT                     |
| 0        | 0.148 1 0.108 1 0.044 04.09 0 0.1/0.14 0 12   |         | 0.110                        | 0.062                       | 0.00                                   | MAGNETIC |                                     |
| o        | Bi. Gd. Th. Yh. Fe. Ga. O.                    | 026     | 9.7                          | 6.7                         | 200                                    | HARD     | HARD PRESENT INVENTION              |
| D        | 01.0 00.3 101.4 10.3 04.3 00.7 0 12           | 020     | 0.072                        | 0.060                       | \.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\. | MAGNETIC |                                     |

FIG. 9

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FIG. 10

| SAMPLE | CHEMICAL COMPOSITION   | ROTARY  | TEMPERA-<br>TURE<br>PROPERTY | WAVE-<br>LENGTH<br>PROPERTY | INSERTION | MAGNE-<br>TIC    | REMARKS                           |
|--------|--|---------|------------------------------|-----------------------------|-----------|------------------|-----------------------------------|
|        |  | (wo/ ,) | (%)                          | (%)                         | (ab)      | TYPE             |                                   |
|        |  |         | ى)                           | /°C) (° /nm)                | (מבי)     |                  |                                   |
|        | ()<br>L<br>F<br>F  | 000     | 10.8                         | 6.8                         |           | HARD             | PRESENT INVENTION                 |
| -      | B11Gd <sub>0.4</sub> I D <sub>1.2</sub> Y D <sub>0.4</sub> F O <sub>4.0</sub> Ga <sub>1.0</sub> U <sub>12</sub>                | 800     | 0.078                        | 0.061                       | 0.07      | MAGNETIC         | MAGNETIC (LARGE AMOUN! OF Tb)     |
|        |  | c u     | 11.4                         | 7.1                         |           | HARD             | PRESENT INVENTION                 |
| 2      | 10   51,1540,9   50,7 1 50,3 F 64,0 4 a1,0 C 12  | 000     | 0.082                        | 0.064                       | 0.04      | MAGNETIC         | MAGNETIC (LARGE AMOUNT OF         |
| :      | L N  | , c     | 11.8                         | 7                           |           | HARD             | PRESENT INVENTION                 |
| =      | B1 <sub>1.2</sub> Gd <sub>0.5</sub> 1 D <sub>0.8</sub> 1 D <sub>0.5</sub> F Θ <sub>4.0</sub> Ga <sub>1.0</sub> U <sub>12</sub> | 950     | 0.085                        | 0.063                       | 0.00      | MAGNETIC         | MAGNETIC (L'ARGE AMOUNT OF        |
| 12     | Bi <sub>1.1</sub> Gd <sub>0.6</sub> Tb <sub>0.9</sub> Yb <sub>0.4</sub> Fe <sub>4.9</sub> Ga <sub>0.1</sub> O <sub>12</sub>    |         | <b>I</b>                     | ı                           | 1         | SOFT<br>MAGNETIC | SOFT COMPARATIVE MAGNETIC EXAMPLE |
|        |  |         |                              |                             |           |                  |                                   |

PRESENT INVENTION PRESENT INVENTION PRESENT INVENTION NVENTION NVENTION **NVENTION** NVENTION INVENTION REMARKS NVENTION **PRESENT PRESENT PRESENT PRESENT PRESENT PRESENT** HARD MAGNETIC MAGNE-TYPE TYPE INSERTION LOSS (gp) 0.095 0.07 90.0 0.10 0.09 0.07 0.09 0.07 0.07 WAVE-LENGTH PROPERTY nm/ 0.062 0.063 0.065 0.065 % 0.061 0.065 0.064 0.062 0.063 6.8 6.9 7.0 6.9 7.0 TEMPERA-TURE PROPERTY ပ္ပ 0.078 0.080 0.085 % 0.088 0.080 0.085 0.080 0.078 0.080 10.8 1.8 12.2 11.8 10.8 /cm) MOMENT ROTARY 950 800 950 770 800 770 770 850 800  $Bi_{0.9}Gd_{0.7}Tb_{0.7}Yb_{0.3}Sn_{0.2}Eu_{0.2}Fe_{4.5}Ga_{0.4}Ti_{0.1}O_{12}\\$  $Bi_{1.2}Gd_{0.4}Tb_{0.7}Yb_{0.6}Ca_{0.1}Fe_{4.2}Al_{0.5}In_{0.2}Si_{0.1}O_{14}$ Bi<sub>1.2</sub>Gd<sub>0.4</sub>Tb<sub>1.2</sub>Yb<sub>0.4</sub>Fe<sub>4.0</sub>Ga<sub>0.8</sub>Ge<sub>0.1</sub>Sc<sub>0.1</sub>O<sub>1.3</sub> Bi<sub>1.0</sub>Gd<sub>0.5</sub>Tb<sub>0.5</sub>Yb<sub>0.5</sub>Dy<sub>0.3</sub>Lu<sub>0.2</sub>Fe<sub>4.0</sub>Ga<sub>1.0</sub>O<sub>1.2</sub> Bio.9Gdo.9Tbo.7Ybo.4Tmo.3Fe4.1Gao.9O12 Bi, 0Gd0, 4Tb1, 1Yb0, 3Ho0, 2Fe4, 2Ga0, 8O1, 2 Bi<sub>1.1</sub>Gd<sub>0.6</sub>Tb<sub>0.9</sub>Yb<sub>0.2</sub>Er<sub>0.2</sub>Fe<sub>4.3</sub>Ga<sub>0.7</sub>O<sub>1.2</sub>  $Bi_{1.0}Gd_{0.4}Tb_{1.2}Yb_{0.4}Fe_{4.0}Ga_{0.7}Al_{0.3}O_{12}$ CHEMICAL COMPOSITION Bio.9Gd1.1Tb0.8Yb0.2Y0.1Fe4.6Ga0.4O12 SAMPLE 5 4 16 5 17 ∞ .. 5 20 21

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 $4 \pi Ms(G)$ 

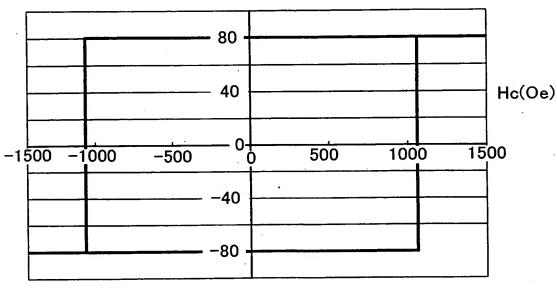


FIG. 12A

 $4\pi Ms(G)$ 

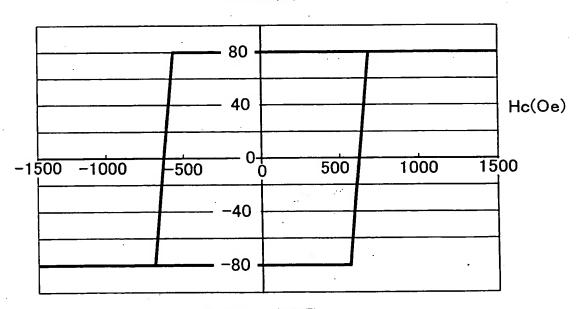
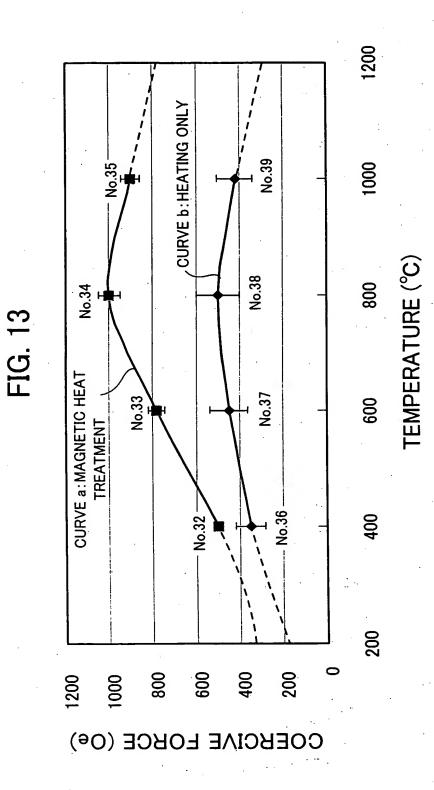
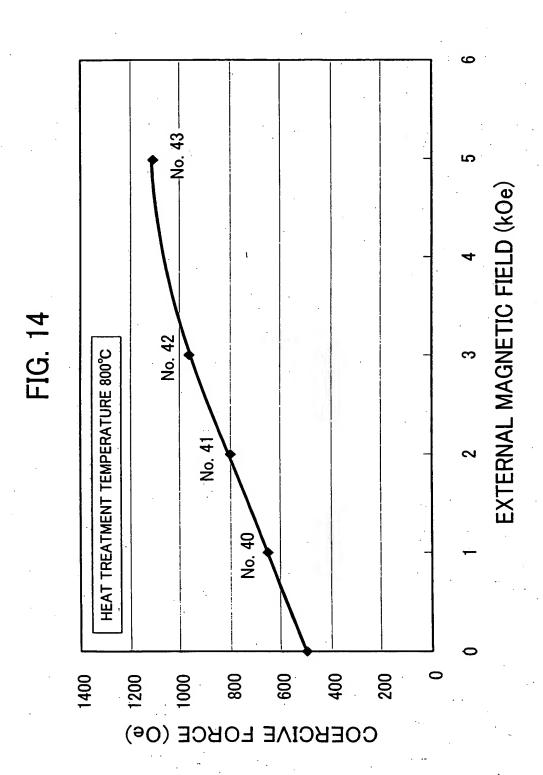


FIG. 12B





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FIG. 15A

## SECTION OF A SAMPLE CUT BY WIRE SAW

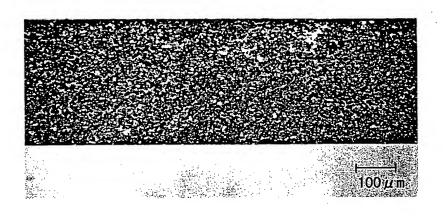


FIG. 15B

## SECTION OF A SAMPLE CUT BY DICING MACHINE

